

## Claims

I claim:

1           1. A configurable computer input device, comprising:  
2           at least one switch removably attachable to a surface and in  
3           communication with a processor, at least one function being  
4           assignable to activation of the switch, wherein the at least one  
5           switch is repositionable at distances smaller than a length or  
6           width of the at least one switch;  
7           circuitry in communication with the at least one switch for  
8           assigning at least one function to activation of the switch;  
9           circuitry for communicating the at least one function to a  
10          host computer; and  
11          circuitry for determining the actuation status of the at  
12          least one switch and communicating the actuation status to the  
13          processor.

1           2. The device according to claim 1, wherein the surface  
2           that the at least one switch is removably attachable to includes  
3           a surface on a structure selected from the group consisting of a  
4           mouse, a monitor, a keyboard, a desk, a work surface, a keyboard  
5           tray, a switch tray, a switch platform, a chair, a computer, and  
6           a printer.

1           3. The device according to claim 1, wherein the at least  
2           one switch and the circuitry for determining the actuation status

1 of the at least one switch are in wireless communication.

1 4. The device according to claim 1, wherein the device is  
2 in wireless communication with the host computer.

1 5. The device according to claim 1, wherein the surface  
2 that the at least one switch is attached to comprises at least  
3 one matrix of receptacles that the at least one switch is  
4 removably attachable to at a plurality of positions, the device  
5 further comprising:

6 a memory for storing data comprising a mapping of the at  
7 least one function assigned to the at least one switch to the  
8 position of the at least one switch in the at least one matrix of  
9 receptacles.

1 6. The device according to claim 5, wherein the at least  
2 one switch comprises at least one pin that extends from the  
3 switch and is receivable by the matrix of receptacles.

4 7. The device according to claim 1, wherein the at least  
5 one switch comprises at least one of a keyboard key, a button  
6 switch, a keyboard key comprising a swiveling key-cap top, a  
7 keyboard key comprising a tilting key-cap top, a keyboard key  
8 comprising a swiveling and tilting key-cap top, and a keyboard  
9 key having a non-standard shape and size.

1 8. The device according to claim 5, wherein the at least

2 one matrix of receptacles is housed in a keyboard housing with a  
3 standard keyboard.

1 9. The device according to claim 5, wherein the at least  
2 one matrix of receptacles is housed in a videogame controller.

1 10. The device according to claim 1, wherein the at least  
2 one function comprises at least one electronic, alphanumeric, or  
3 keyboard function.

1 11. The device according to claim 10, wherein the at least  
2 one function comprises at least one function selected from the  
3 group consisting of movement of a joystick, actuation of a  
4 joystick button, movement of a mouse, actuation of a mouse  
5 button, actuation of a game controller, and actuation of a  
6 keyboard key.

1 12. The device according to claim 11, wherein a plurality  
2 of functions are non-permanently assignable to the at least one  
3 switch, including at least one of timing, cadence, and sequence  
4 of the functions.

1 13. The device according to claim 1, wherein the circuitry  
2 for determining the actuation status of the at least one switch  
3 scans the at least one switch.

1 14. The device according to claim 1, wherein the processor

2 comprises a controller for receiving the actuation status of the  
3 at least one switch, determining the function assigned to  
4 activation of the switch, and transmitting the at least one  
5 function to the circuitry for communicating the at least one  
6 function to the host computer.

1 15. The device according to claim 1, further comprising:  
2 a memory for storing data comprising the at least one  
3 function assigned to the at least one switch.

1 16. The device according to claim 1, comprising at least  
2 two switches, wherein the plurality of keys may be positioned  
3 such that the at least two keys are not aligned.

1 17. The device according to claim 1, wherein the at least  
2 one switch is operable simultaneously with another computer input  
3 device in communication with the host computer.

1 18. The device according to claim 5, wherein the matrix of  
2 receptacles is non-contiguous.

1 19. The device according to claim 5, wherein the matrix of  
2 receptacles is non-planar.

1 20. The device according to claim 1, wherein the at least  
2 one switch comprises a switching mechanism, an attached key cap,  
3 and a switch housing.

1           21. The device according to claim 1, wherein the function  
2 is non-permanently assignable to the switch.

1           22. A configurable computer input device, comprising:  
2           at least one switch removably attachable to a receiving  
3 surface;  
4           at least one receiving surface for receiving the at least  
5 one switch at a plurality of positions, wherein a distance  
6 separating any two positions may be smaller than a length or a  
7 width of the at least one switch;  
8           a memory for storing data comprising a mapping of at least  
9 one electronic, alphanumeric, or keyboard function to the at  
10 least one switch when the at least one switch is removably  
11 attached to a position of the receiving surface;  
12           circuitry for scanning the at least one switch when the at  
13 least one switch is removably attached to a position of the  
14 receiving surface and for determining the actuation status of the  
15 at least one switch;  
16           a controller responsive to the circuitry for scanning and  
17 for consulting the memory to obtain the at least one function  
18 mapped to the at least one switch upon actuation of the at least  
19 one switch; and  
20           circuitry for transferring the at least one function  
21 obtained by the controller to a host computer with which the  
22 device communicates.

1           23. The device according to claim 22, wherein a keycap is

2 attached to the at least one switch.

1 24. The device according to claim 22, wherein a button is  
2 attached to the at least one switch.

1 25. The device according to claim 22, wherein the at least  
2 one receiving surface comprises a matrix of receptacles for  
3 receiving pins attached and electrically connected to the at  
4 least one switch.

1 26. The device according to claim 22, wherein the at least  
2 one switch comprises a switching mechanism, an attached key cap,  
3 and a switch housing.

1 27. A computer system, comprising:  
2 a configurable computer input device, comprising at least  
3 one switch removably attachable to a surface and in communication  
4 with a processor, the surface comprising at least one matrix of  
5 receptacles that the at least one switch is removably attachable  
6 to at a plurality of positions, the at least one switch may be  
7 repositioned on the matrix of receptacles at distances smaller  
8 than a length or width of the at least one switch, at least one  
9 function comprising at least one electronic, alphanumeric or  
10 keyboard function is assignable to activation of the switch;  
11 circuitry in communication with the at least one switch for  
12 assigning at least one function to activation of the switch;  
13 circuitry for communicating the at least one function to a host

14 computer; a memory for storing data comprising a mapping of the  
15 at least one function assigned to the at least one switch to the  
16 position of the at least one switch in the at least one matrix of  
17 receptacles; and circuitry for determining the actuation status  
18 of the at least one switch and communicating the actuation status  
19 to the processor; and

20 a host computer selected from the group consisting of a  
21 microcomputer and a video game computer.

1 28. A method for generating input to a computer, the method  
2 comprising:

3 providing a configurable computer input device comprising at  
4 least one switch removably attachable to a surface and in  
5 communication with a processor, at least one function being  
6 assignable to activation of the switch, wherein the at least one  
7 switch may be repositioned at distances smaller than a length or  
8 width of the at least one switch; circuitry in communication with  
9 the at least one switch for assigning at least one function to  
10 activation of the switch; circuitry for communicating the at  
11 least one function to a host computer; and circuitry for  
12 determining the actuation status of the at least one switch and  
13 communicating the actuation status to the processor;

18        providing at least one input from an existing computer input  
19 device;  
20        recording the at least one input from the existing computer  
21 input device; and  
22        assigning the at least one input from the existing computer  
23 input device to the at least one switch.